

Remarks

Claims 1, 7-8 and 13-16 remain in the application.

Claim Rejections under 35 USC § 103

Claims 1, 7-8 and 13-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Alcock et al. (US 3,800,645) in view of Hicks (US 4,628,780).

Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Alcock et al. (US 3,800,645) in view of Hicks (US 4,628,780) as applied to claim 13.

In response to these rejections, the claims have been amended to more clearly distinguish over the prior art.

Applicant respectfully disagrees with the rejection of the claims as provided for in the Office Action. Specifically, Applicant disagrees that application of the teachings of Hicks to the Alcock device is appropriate, and that such application would result in the present invention as originally claimed.

Hicks teaches to provide for air ejector system in the moving, reciprocating components of a punch press, for the purpose of loosening punched parts from the punching components, in order to overcome the deficiencies of the prior art noted therein (see e.g, col. 2, lines 1-11). Hicks does not teach an air system for ejecting sheared rods from a closed knife, and application of the teachings of Hicks to the disclosure of Alcock does not result in such an air ejection system.

Nevertheless, the claims have been amended herein to more clearly distinguish over the prior art, and as originally disclosed in the specification and drawings of the present application. Among other things, amended claims 1 and 16 include additional limitations that locate the air discharge port aligned with the opening in the knife when in the second position for ejection of the sheared rod from the knife in a direction generally parallel to the axis of the opening and of travel of the rod stock. The amended claims also include further definition of the gage surface, tapered contact surface, and gage pin structure to distinguish over the gage arrangement of Alcock. Finally, the amendment to claim 16 clarifies the structure of the support die in which the discharge port is located in such claim.

In view of these amendments, Applicant believes the claims and entire application are now in condition for allowance.

Version With Markings Showing Changes

1. A machine for adapted to cutting rods from rod stock, the machine comprising:
 - means for advancing the rod stock along a first axis;
 - a closed knife mounted for reciprocating movement perpendicular to said axis between first and second positions, said knife having an opening (i) aligned with said axis and through which the advancing rod stock passes when the knife is in said first position and (ii) radially displaced from said axis when in said second position, said knife further being adapted having an edge to shear off a rod from the rod stock upon moving toward said second position; and
 - an air supply having a discharge port (i) positioned upstream of the knife, and (ii) aligned with said opening and oriented to discharge generally parallel to said axis and through said opening when said knife is in said second position for ejecting the cut rod from the knife in said direction.
7. The machine of claim 1 further comprising a (a) gage surface (i) located downstream of said knife, (ii) facing towards said knife, and (iii) aligned with said axis to position the advancing rod stock in the knife, and (b) a contact surface (i) in fixed relation with said gage surface, (ii) extending in a direction away from said gage surface, and (iii) facing towards said second position with respect to said axis to engage a sheared rod that may be carried back in the knife as it returns to said first position, said gage surface and contact surface being connected for resilient movement away from and towards said axis as the knife returns to said first position to enable discharge of said the sheared rod from the knife in said first position by the advancing stock-in the event the rod is not fully discharged by said air supply and is carried back to said first position in the knife.
8. The machine of claim 7 further comprising a gage pin having an free end defining said gage surface, and having said gage pin being formed with a tapered side portion defining said contact surface and tapering away from said axis upon progressing in a direction away from said knife positioned for engagement with the rod as the rod approaches said first position to assist in the removal of the rod from the knife.

13. A machine for adapted to cutting rods from rod stock, the machine comprising:

- means for advancing the rod stock along a first axis;
- a closed knife connected for reciprocating linear movement perpendicular to said axis between first and second positions, said knife having an opening (i) extending along said axis and through which the advancing rod stock passes when the knife is in said first position and radially displaced from said axis when in said second position, said knife further being adapted having an edge to shear off a rod from the rod stock upon moving toward said second position;
- an air supply having a discharge port (i) positioned upstream of the knife, and (ii) aligned with said opening and oriented to discharge generally parallel to said axis and through said opening when said knife is in said second position for ejecting the sheared rod from the knife in said direction when in said second position; and
- a gage pin located downstream of said knife and aligned with said axis to engage the downstream end of the advancing rod stock and to position the stock in the knife,
- the gage pin being connected for resilient linear movement away from and towards said axis and with the knife as the knife returns to said first position to enable discharge of a sheared the-rod from the knife by the advancing stock with the knife in said first position in the event the sheared rod is not fully ejected by said air supply and is carried back toward said first position in the knife.

14. The machine of claim 13 further comprising a base located downstream of the knife and a cap connected to the base for resilient movement towards and away from said axis herebetween, said gage pin passing between said base and said cap such that said the resilient movement of the cap established enables said resilient movement of the gage pin.

15. The machine of claim 13 in which the gage pin is formed with a tapered portion facing generally towards said second position with respect to said axis positioned for engagement with the rod as the rod approaches said first position to assist in removal of the rod from the knife.

16. The machine of claim 13 further comprising a stationary support die having an opening aligned with the opening in said knife when in said first position and through which the advancing rod stock passes upstream of the knife, and ~~in which said air supply includes an air transport line extending through the die and having said a-discharge port end~~ aligned with the opening in the knife when the knife is in said second position.

Respectfully submitted,

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